CARSWELL AFB
TEXAS

ADMINISTRATIVE RECORD
COVER SHEET

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Restoration Advisory Board Meeting

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MR. WALTERS: Everybody ready to roll? Public members? Are you guys ready to roll? Would you like to wait a few minutes? Bill, what do you think? Are you ready to get out of this hot weather, get back in the pool?

MR. GROSS: Hey, I had to replace my pool and it's not working, so...

MR. WALTERS: Well, I didn't see anybody else coming into the parking lot, so I think we will go ahead and start. You have me up here again tonight. Allison Thompson, she took a new job, so she won't be our co-chair anymore. So we were going to look for another one, but we have heard some people obviously are busy with life and activities.

So if nobody wants to do it, the Air Force members will probably rotate and continue to still have these meetings, and then in the future, if we have somebody show up that wants to be the co-chair, we will be happy to have them take over for us. So I don't know. Are we going to ask for a co-chair tonight or --

MALE SPEAKER: Yes.

MR. WALTERS: So do you want to do that now or wait until later to see if anybody is excited about what we are doing?

MR. GROSS: How much does it pay?

MR. WALTERS: Free refreshments.

MR. GROSS: That's complimentary. Says complimentary water?

MR. WALTERS: I could probably throw in a hat or two.

MR. GROSS: Well, I got one of them.

MALE SPEAKER: Shirts?

MALE SPEAKER: Think of all of the self satisfaction.

MR. WALTERS: There you go.

MR. GROSS: I am satisfied.

MR. WALTERS: If anybody from the public would like to volunteer to be a co-chair, raise your hand. Seeing none, we will keep it as the Air Force lead for the next meeting, and then we will see if you can talk your neighbors into coming and doing it with us.

I think the next order is, I think we are going to do introductions of everybody. Again, I am George Walters from Wright-Patterson Air Force Base, and I do Air Force -- Project Manager for Restoration. We will start with Mike. Introductions.

MR. DODYK: I am Mike Dodyk. I'm

the -- I work for AFCE, and I am the resident engineer here at Carswell.

MS. ROCKFORD: My name is Miquette Rockford, and I work for a company called HydroGeoLogic as a contractor for the Air Force.

MS. GETUARA: My name is Stacy Getuara [phonics], and I am interning at Lockheed in the Environmental Department.

MS. HAMILTON: Audrey Hamilton. I'm a contractor with the Air Force.

MR. HAWKOM: Mike Hawkom [phonics] With AFCE in San Antonio.

MR. WALTERS: Start over here with this guy.

MR. McGRAW: My name with Greg McGraw with Shaw Environmental, the contractor with the Air Force.

MS. CASTLEBECK: I'm Karen Castlebeck. I from the Public Affairs office at Wright-Patterson Air Force Base.

MS. PATE: I am J'Nell Pate. I am from the community.

MR. SULLIVAN: My name is Bob Sullivan. I am with the Environmental Protection Agency, Superfund Project Manager for Air Force Plant

4.

MR. MATTOX: I am John Mattox from the community and a representative of the property owner (inaudible.)

MR. BAILEY: Ed Bailey with Blouson [phonics] Hamilton support (inaudible.)

DR. WIREMAN: And my name is Jody Wireman. I am at Brook City Base but not with AFCE. I'm with the with the Air Force Institution for Operational Health.

MR. McSHULLEY: Steve McShulley of Air Services, consultant to the Air Force.

MR. KARAS: I'm Doug Karas with the Air Force Real Property Agency.

MR. PRINGLE: Chuck Pringle with the Air Force Center for Environmental Excellence and also the Air Force Center for Real Property Agency.

MR. SKALEN: Skalen, City of Fort Worth Water Department.

MR. SEWELL: I am Tim Sewell. I am with the Texas Commission on Environmental Quality, Region 4 office out of Fort Worth.

MR. BENNETT: Noel Bennett with the U.S. EPA Regional Office in Dallas, Federal Facility Section.

MR. HOOPER: I am Mike Hooper with the Texas International Guard Unit.

MR. HENDERSON: Greg Henderson with the City of River Oaks.

MR. OWEN: D.W. Owen, City of River Oaks.

MR. O'SHEFSKY: Bill O'Shefsky, retired Air Force. That's it.

(Laughter.)

MR. SCHULTZ: Dan Schultz with Earth (inaudible). We are an Air Force contractor.

MR. PARSON: Dave Parson, (inaudible)SAT.

MALE SPEAKER: (Inaudible.)

MR. WEISS: Rick Weiss, Shaw Environmental. We're an Air Force contractor for (inaudible.)

MR. WALTERS: And folks in the back, can you hear them?

THE REPORTER: Missed a tiny bit of the last one.

MR. WALTERS: Rick Weiss.

THE REPORTER: Thank you.

MR. WEISS: Shaw Environmental.

MR. WALTERS: Amazing she can't hear

you, Rick. And anyway, since we do have to take the minutes, we would like to make sure you speak up and talk loudly so that she can hear everything and some of us people who can't hear good, I'd like to -- I will probably ask you twice if you ask me a question. But that's okay.

I think next, we are going to -- if you looked at the minutes at the last meeting hopefully, I am going to -- anybody have any questions or errors they would like to correct? Otherwise, we are going to move for approving the minutes. Do I have a --

MALE SPEAKER: So moved.

MR. WALTERS: So moved?

MALE SPEAKER: Actually second, whatever.

MR. WALTERS: Okay. Let's get rolling here. I don't see Leland here. If he shows up later, we will let him do the Westworth Redevelopment Agency -- that's not him. We will let this guy show up. One second. But actually Chuck's up.

Okay. We did the nominations. I don't believe there were any action items from the previous meeting. Very good.

Chuck, you're up next, so why don't

you -- Chuck? And Miquette, does he just push a button to get started?

MR. PRINGLE: I am Chuck Pringle. I work for the Air Force Center for Environmental Excellence. I also represent the Air Force Real Property Agency who owns the land at Carswell Air Force Base. So my job is to support the Air Force Real Property Agency, clean up the environment as necessary on the BRAC land.

And on the other side of the house, we have Mike Dodyk, who is cleaning up the -- the bases for the sites on the Naval side. When that all gets done hopefully next year, we will be able to transfer the land to the Navy and hopefully the golf course, probably not next year but the year after that, we will be able to transfer that to the -- to the WRA, Westworth Redevelopment Authority.

I am presently trying to get the Weapons Storage Area transferred. But before I get into that, kind of briefed up, Jody Wireman is going to speak to you now, who is basically going to be talking on the Weapons Maintenance Investigation, which was done in the Weapons Storage Area and all of that. And we will go from there.

Do you have a pointer?

DR. WIREMAN: Yeah, I should have one. Yeah, my name is Jody Wireman. I am at Brook City Base in San Antonio and working for the Air Force Institute for Operational Health, which is an Air Force Surgeon General outfit.

The group that I work with basically is the -- you know, they are the brains for the health physics, the nuclear side as far as health risks from -- from radiologicals. And they would respond to -- you know, how you -- they talk about dirty bombs, things like that. Well, the military folks in our group would respond to those conditions.

So we have got expertise in the military, and we have also got civilians that -- health physicists who work with radiological. So that's why the Air Force Real Property Agency came to our group, to provide -- provide assistance on this project.

So I am going to be going over, you know, a little bit of the history; how we found out that there were six BRAC installations that had weapons, maintenance activities that produced some low-level residues of radioactive materials, and I am going to go over about how those six sites were -- the six installations were identified, including the

off-base Weapons Storage Area at Carswell.

I am going to talk about what we know now; the path forward. There was a Weapons Storage Area survey that was done at Carswell first, and then eventually at the other four installations. One of the installations was Loring Air Force Base, and they had additional information separate from Carswell and the other four because they fell under -- it's a -- they fell under the Atomic Energy Commission early on. So they identified some trenches and remediated them right away. In the -- as part of the IRP process.

So we have got one site -- one installation that's already cleaned up. We found out about five more. And the first place that we went, logistically, it made sense. We brought a team up from Brooks City Base, and they did the survey and some -- some of the areas where I will be going over to identify if there was any immediate concern whether you would have to have a team come out and do some sort of remedial action.

So that was done on the 27th of May and, based on the findings there, we -- we say that there is no immediate risk. But I will get into where we are going to go from here.

It's definitely not over. We are going to look at whether there are trenches out there, and I will tell you about the approach that we are going to use.

I guess it's in the IRP frame, we are still in the preliminary assessment site investigation where -- and I will give you the information that we have. But we are still in the early stages of just identifying whether or not there is a trench out there.

This is a pretty busy slide. I am glad that you have the handouts. But basically, what happened, there was a secrecy component to not knowing about what was going on in the Weapons Storage Areas during the late '50s, early '60s time frame.

But what had happened -- and I guess some of the -- some of our folks say it's like the stars or like planets being aligned or something like that. There was a health physicist who had worked IRP activities, including that at Loring Air Force Base.

So he was aware of certain operations that were accomplished that produced these low levels of waste materials. Just they were basically

residues from these open systems, and open systems means that -- and I will show you a picture of a nuclear weapon later, but essentially, it was two components.

And originally we thought -- at Carswell, they thought they just had a one-component sealed system, but the new information was that the system was, in fact, open. And because it was an open system, they cleaned it out with rags, and they had -- and the rags wiped it off. It was like a dust, a rust. And what they found at Loring was a lot of white materials and, you know, personal protective equipment that had low levels of radioactivity associated with it.

But this, this health physicist that worked at the Air Force Safety Center -- through the VA process, are asked whether or not these people were experiencing or could be exposed to levels of radioactive materials that could cause an adverse health effect.

So he started talking to these weapons maintenance workers and discovered that it wasn't just Loring that this happened at; it was happening at other installations.

So he contacted the Air Force Real

Property Agency, the BRAC folks and said, you know, "This doesn't make sense. We only did it at Loring. Are you sure you didn't do any kind of clean-up or find trenches at other sites?"

So this began a -- a survey or I guess a records search in late '01 that ran through January, '03. They had to contact a number of Army and DOD offices to get the records of where those open systems were used and talk to weapons maintenance workers from the '50s and '60s, assure them that what they were going to say wasn't going to be held against them, you know, in a court of law because they originally pledged that they weren't going to release any kind of weapons maintenance-related activity.

So they started talking to workers. They were looking at records to see where these open systems were used, and that's how Carswell was identified.

The Air Force Safety Center, January through the present, is still collecting information: In October, there is going to be a meeting with these retirees, these former weapons maintenance area workers to try to refine where these trenches may have been.

And then over the last couple of months, we have been going out to all of the installations. And the unique part or the unique thing about the way we are approaching this is that we are doing -- you know, we are doing it out of one office, the Air Force Institute for Operational Health, and we are using one contractor, Cabrera.

And Steve McShulley is here from Cabrera, but we are trying to use a consistent approach. And -- and probably more important than that is we can learn from it as we are -- as we are going through it.

If there is one area that seems to be the location where the trenches are put, we can apply that at other installations, that information.

This is just some examples that you can pull off of the web, I guess, of what the weapon systems looked like. And this is the part that would open up. They would take the nuclear device out of there, and that's the part that the workers of the day considered to be, you know, harmful.

And that's the -- you know, that was the nuclear, you know, explosive -- that was the nuclear device, and this outside component is the -- is the part that they would -- where most of the

waste would have been generated from.

Because inside, inside of there, they had to make sure the components fit together, so they had to make sure that that oxidized rust, depleted uranium, was cleaned out so that they would slide together. And that's where -- that's the waste that we are talking about.

So it's -- it's a uranium, and all of the uranium, you know, isotopes are what we are looking for.

As far as Carswell, again, it had the open systems, the two-part systems in the '50s and '60s. They had to clean it out. So it wasn't likely. It was -- it was -- it did happen that this oxidized material was removed.

Again, it's -- it's just the residual contamination. Somebody explained it like wiping the windshield of your car; kind of a dust type material that they would collect on rags, and -- and they used TCE and some other things during this, during this process; small quantities of that.

Our -- our thought is that these wastes would be put into trenches inside the Weapons Storage Area fence; that they wouldn't move it outside the Weapons Storage Area fence, and Loring

actually had trenches.

The unique thing about Carswell is they there -- they actually had a Solid Waste Management Unit that they removed pipes, three pipes that had radioactive material, and we are still doing the records search to see if that's where the waste was put.

Some of the documents say radium dials were put into those pipes. Early on, they said there were possibly other radioactive materials, and our thought is that, yeah, they could have had some radium dials in there, but more than likely, the waste from the operations, the maintenance operations, would have been put in those pipes as well.

And there is a possibility that it could have been shipped off, but we don't have any records that shows that the materials were shipped off.

So our thought is, you know, get the best available information and see if we can locate trenches out there unless we can get information that suggests that it was shipped off or that it was within that one cleaned-up area.

So we are still, still looking at

records. Most of you know where the offsite Weapons Storage Area is located in relationship to the Naval Air Station.

As far as the Weapons Storage Area, itself, on your paper I think it has this building here and this building here up at the top of the page. And I guess these are the areas that some of the workers that they interviewed thought that that material may have been placed in those areas.

And the way that we are planning out the site so far -- and we are going to obviously work with the regulators to develop the plan further. But, you know, the potential areas of investigation are up around here, up around these igloos, and then where they took that shell, the big part -- the big part of the weapon, they -- the big part of the weapon, they would take it down into this facility. And that's where they would take the TCE and clean it out down there.

So this area has been an area that we have been including in the preliminary plans for investigations.

And I guess I can't recall exactly where the -- right here, this -- this dot right here is where the three pipes were located. So it's kind

of logical, too, that they would have taken that waste and put it -- have put it over to the Solid Waste Management Unit.

But right now, you know, we are looking at this area, around this area and then trying to get information about the Solid Waste Management Unit.

So what -- what's been going on so far is that we conducted a preliminary site investigation to see if anything needed to be done right away.

Cabrera is our contractor. And essentially today we went out with the contractor to look at the site so they could start working on -- or developing the work plan.

And then obviously, the regulatory and the community input into that process is going to drive it. And obviously, we are briefing that information to the RAB today as well. I have the 20th there, but it's just been today that we have been here.

And then I think I explained it, but most of the information we have is based on experience at Loring Air Force Base, because that's the only place where we actually found -- well, we actually looked for and found the trenches, and --

and interviews with folks who did the Weapons Storage Area or Weapons Maintenance.

Just a little bit about that survey. Again, it was a -- just a preliminary investigation. The question is -- the main question was: Is that stuff, if it was buried, was it somehow making it to the -- did it somehow make it to the surface?

If somebody is walking in that area, is there a health hazard or an ecological risk to those folks?

And we surveyed around those buildings that the workers identified. We went over the Solid Waste Management Unit 60 again, and they looked at a few other areas as well in that initial survey and didn't really see. Basically things were within the natural background levels during that evaluation.

There was one, one igloo that they found some higher levels in the concrete. I guess it was 318531 that they found some higher levels in the concrete.

So that will be, you know, one of the main focuses of the next survey, too, is to reassess that report. That was the report that was done in -- came in out in '96. The survey was done in '94. Just of the building.

And the way we are moving forward, it's going to be the -- the CERCLA process. The IR -- the normal IRP process where we bring in the regulators and the community to help us go through this process.

And the first question that we try to answer with that preliminary evaluation was, "Is there an immediate risk? Does something have to be done right away?"

The next step is the site inspection, and then -- it's a non-intrusive scoping survey. So we are going to, again, do a more comprehensive scanning of the surface, and we will also have geophysical work done at that time to try to identify if there are any kind of trenches out there with this, you know, acute physical work.

And then, you know, based on the results of that inspection, we could move into an intrusive survey remedial investigation or, depending on what the levels -- what they find -- if they go back to that one building and, you know, in fact, there is some radioactive material in that concrete of the bunker, they can -- they can remove that concrete.

Or if they found the trench, based on

the radiological measurements, they could come out and do a removal action at that time as well.

So the investigation, we just started developing the sampling plan, and we really can't move too quickly on that until we get some regulatory input to make sure that we are going in the right direction.

It's going to be a non-intrusive scoping survey, and there will be some surface soils and if it's available, surface water and possibly some core samples from some of the bunkers, as well.

So right now, I guess we are -- we have kind of have a sampling plan we have developed for other sites and we are going to have to run it past the regulators to see if that's the approach that they think is right for Carswell.

Then we'll distribute that for regulatory review. Again, it's considered a non-intrusive. So if the trench is, say, three, four feet, six feet deep as is -- was the case at Loring, it may need some more -- it may need an initial study after the initial one that we do.

Again, once we get that -- once we do the -- this initial investigation, we are going to have to get with the regulators to talk about the

findings to see where we have to go at that point.

If at any time, you know, we find that the levels are elevated in a certain area of radioactive material, we can move into a clean-up action. We have gotten a commitment from headquarters at RIPA that says we can go right to -- they will find money for us and we will move to clean up, you know, with concurrence from the regulatory community and the community.

And obviously, in order to do the thorough job, we would have to go to the final status survey of that area. And, in fact, we may have to do some additional work within that Solid Waste Management Unit, as well.

Conclusions: You know, we are really early on. And as far as an IRP process goes, we are before the PASI. So I mean, this is a good time to be involved, because you can actually help direct this work.

We did an initial evaluation, like I said; no immediate human health or environmental risk.

We are developing plans, but we are going to have to -- I guess we are going to have to wait until the next BCT before we can really iron out

what that plan is going to look like. I guess it's going to be in November sometime. But hopefully we can start talking, you know, before then so we can start moving towards developing that draft plan.

But the money is on line. Unlike maybe some other projects, the money is already on line to do the site -- site investigation. So that's one good thing. We do have commitment to go through the process with this project.

And basically, that's all I have for today.

MR. SEWELL: Can you please state again how the potential radioactive residual material was generated?

DR. WIREMAN: The radioactive material was generated because you have this open system in which -- basically it was -- and Ed could explain it better afterwards if you want to maybe talk about it.

But it's a two-part system, and one part was taken out and moved to one of the -- to one of the igloos.

Another part was taken to that maintenance area where they actually used rags, some usually containing a solvent like TCE, and wiped out the insides. It's -- it was an oxid -- they had to

remove the oxidized depleted uranium.

MR. SEWELL: So you're basically wiping out the inside of a casing?

DR. WIREMAN: Yes.

MR. SEWELL: Okay.

DR. WIREMAN: That's right.

MR. O'SHEFSKY: Bill O'Shefsky. You say if -- if a burial site does exist out there, you say it does not pose a potential hazard to -- what -- what do you base that on? It doesn't -- how can you say it doesn't -- it's not hazardous?

DR. WIREMAN: I say it's not an immediate risk right now that's out there because, based on the information we have, because it's buried, the risk is -- most of it's external.

So the soil that's on top of it is actually protecting the person that would be walking over it. Is that -- but that doesn't mean it couldn't be a potential problem in the future, and that's why we need to do this more thorough survey.

MALE SPEAKER: Maybe, too -- and correct me if I am wrong, you know, on some of my facts, but the -- the oxidation, the stuff that's on the rags, is from depleted uranium which has low levels of actual emission.

And it's my understanding that in terms of your health risk from depleted uranium, it's actually, if you internalize it, more than if -- if you were exposed to emissions of it.

MR. O'SHEFSKY: But do you have just rags out there? Are you -- are you -- are you taking this from your findings that you got up at Loring?

DR. WIREMAN: Right, yeah, from the findings at Loring.

MR. O'SHEFSKY: Well, you don't know what -- if you do have a burial site out there, you don't know what you have in there.

DR. WIREMAN: Well, it would logically be just the waste materials from these maintenance operations. There is -- there is -- that's the reason we are doing this evaluation is because we have information that suggests that there would be these waste materials generated from cleaning it up.

There's no -- there's no information that suggests it would be anything else.

And the initial walk-over survey, again, if there was -- if there was an external hazard that was immediate, we would have -- we would have found it at that point.

When Cabrera does their evaluation,

it's going to look -- you know, it's going to do a more thorough job at that. And we are not going to stop. We are not stopping at the surface necessarily, you know, because we are going to do this ground-penetrating radar, metal detectors, see if there are any trenches.

The next phase would be to evaluate -- if they look like a trench, we are going to go down and dig down and see if it's there. If we -- if we identify what looks to be a trench, we will go down and see if there is radiological material and then clean it up.

MALE SPEAKER: Did the workers that cleaned it out, did they have protective gear on when they were doing that? Or did they just take the rag and wipe it out?

DR. WIREMAN: I am not clear on everything, but they did have some respirators and some smocks. I don't know exactly what activities they used the respirators and smocks with, and gloves.

But that was part of the waste materials that were generated and that they found at Loring. And they are working with the maintenance workers to see, find out exactly what PB they used

and in what operation.

Did they actually use it for this operation? Did they consider that hazardous? I think some of the maintenance people didn't think that was a very hazardous operation because they weren't dealing with the -- you know, the nuclear part, you know, so to speak.

So some of them may not have, you know, taken the right approach, but that's something that we are working on; I guess the Air Force Safety Center has been doing, and that's how they identified Carswell.

They are the ones that are trying to find out whether these VA claims should be -- they should be processed or not.

MALE SPEAKER: Well, that was my question. Did any of the workers get ill from doing this?

DR. WIREMAN: I don't have -- yeah, I don't have that -- because I guess the -- the VA folks would be the ones who have that information.

MR. PRINGLE: Let me ask you: We had a briefing on this about a year ago at the safety center.

They basically identified Carswell and

said they had talked to some of the maintenance workers and they had a pretty good idea where this might -- this point.

But they also looked at the other places and they talked to the maintenance workers up there, and none of them have any ill effects at this point.

A lot of this work was done in the '50s and '60s and thought if something would have occurred, they would have known by now. So they have seen no problem because of this low level.

And as far as the digging of the ditches, my understanding was Atomic Energy Commission at Carswell at the time, they have guidelines, and these people followed the guidelines, but it was classified work because what they were doing with it and all of that.

So if they -- they dug the trenches, they dug them at a certain depth. And the idea was it was low level and as long as there was soil on top of it, there would be no emissions.

So the preliminary assessment out here, survey on 27 May, was to go out there and see if there was any leaks possibly from these ditches coming out of the ground, and we didn't get that

indication.

So the point is now we're just trying to make sure that, if there was a ditch or more than one ditch out there, we want to find them. But the indications are that if they are there, we are not detecting them at at this point. Again, we are still doing some records search looking further, especially Carswell, because it seems like a lot of the Weapons Storage Area folks out there can't be found; we don't know where they are at.

We have got some maps. We did an environmental assessment on the Weapons Storage Area back in '99, 2000. We actually got clearance at 2001 from the regulatory folks, both EPA and the State on what we did.

When we looked out there, we did find some radiation, but it was mainly in the water but that was from natural purposes; radon in most cases the cases and all that. So the indications are that, you know,this and that are not necessarily connected.

We went through igloos, we went through the ground and soil and everything out there, and we didn't find anything that was suspicious.

I find out today, which I didn't know about, that the Corps of Engineers also did a survey

back in 1992 which was more related to what was going on here. And they were actually looking for radiation and that type of stuff, and their indications were that they didn't find anything either.

So we have had three surveys; the one that they just did, the one that we did, and one back in 1992. Again, we are going -- continuing records research and the safety center, along with AFIOH and operations, are checking with other people and they're asking more people to come forward.

As a matter of fact, there is a flier out there on the desk that is particularly for here that if you know something about this, you know someone that might be knowledgeable or knows somebody else, there is a number on there. We would like you to go find that, call in, and we can continue on and all of that.

In the meantime, we are continuing our records research and talking to different people. We are talking to Reserves, too, because when this land was originally put out here at the Naval Air Station, a lot of the documentation kind of indicated that the Reserves were the recipient of a lot of the records. We don't know if that's true or not.

And Mike, did you ever get a call back?

MR. DODYK: Well, just got that inventory but no records.

MR. PRINGLE: Okay. We're going to do some more searching. And it may go through the Corps of Engineers. Probably go to St. Louis and all of that, because we want to make sure that we don't miss anything here.

But the AFIOH is going to actually take the equipment out there and go over all the land and investigate to make sure that -- if our paperwork isn't correct, at least we are going to check on things and all of that.

And again, I was told by the safety center that no one has ever been linked to this being a health problem whatsoever.

Tim?

MR. SEWELL: One follow-up question and request. The last time I was out there, that area was pretty well secured in terms of fencing and gates and the like for entrance and exit.

Has that -- has that been altered in any way?

MR. PRINGLE: Not really. The first

person you have to go through is the rancher out there, which is Rudy Lambert. And what we do is we call him to make sure that -- before anybody goes out there -- because you have to -- the property, open the first fence. Then you get into the second fence which is where the igloos is, and there is actually another fence around that whole total area.

So yeah, there is still security out there. We make sure nobody goes out there. And if somebody's out there we don't know about, then I get a call from Rudy right away, saying, "What's going on?" But most cases, I tell him ahead of time.

Yeah, we are keeping it as secure as possible to make sure no one's going out there. And, also, Mr. Dodyk is kind of my outreach at the time. The Field Engineer. Whenever we have to go out there and do things and all that, he works with Rudy and we go accordingly with whatever security is necessary.

MR. SEWELL: And I would like to also -- I'd also like to request that the information briefing handouts and so forth be sent to my manager, Mark Reeder in Austin.

MR. PRINGLE: Yeah. We did that.

MR. SEWELL: It's been done already?

MR. PRINGLE: Before the survey

occurred --

MR. SEWELL: Okay.

MR. PRINGLE: -- my job was to -- to get with the regulatory folks. So I sent Noel some information; basically a fact sheet out there. I did the same thing with Mark. I told them what we were going to do.

And then after the survey was done, I told him what the results were and all of that. And the handouts out there tell you one more time, the fact sheet, exactly what Jody has pretty much said.

And there is some more information on his organization and, also, the briefing is out there, too, if you want to see that. And there is some other information out there about radium, radon, uranium and that type of stuff.

So, yeah, we are trying to do that as quickly as possible.

And if I may follow up on what Jody is saying, we are in the throes of developing a work plan: What we're going to do and how we are going to do it type thing. So as soon as we get that in a position where we can send it out, we will send it out to the regulatory folks and whoever else. We are not going to wait until November to kind of get the

thing going.

The idea is by the time we get to November, we will have a work plan everybody has had input on. We will brief it one more time. And if anybody has got any other inputs on, we will make that part of it, then we will make it a final and then we will start the actual -- to actually go ahead and do the work.

After the work is done, again we will bring it back to the BCT as well as the RAB and explain what we've done and where we're going and all of that type of stuff. So as things occur, if I think that they are necessary, then I will call, you know, the folks accordingly and let you know what's going on.

Right now, as far as him doing his survey or -- I won't say you -- Steve. We are probably talking somewhere around October, November time frame or something like that before they actually get out there.

So by the time we do the work plan, we are talking August, September. Let it go through a few throes and all of that, and then by that time the schedule will kind of kick in accordingly.

One other thing, if I may. Steve from

Cabrera has been doing this type of work for some time, so if you would, would you kind of get up and say what your experiences are --

MR. McSHULLEY: Sure.

MR. PRINGLE: -- your company --

MR. McSHULLEY: Well, Cabrera Services is a radiological remediation specialty company. Myself, I am a health physicist and have been working in this area for about 25, 30 years.

For the last four years, we have been working very heavily with the Air Force on Weapons Storage Areas disposal sites and quite a bit of weapons work.

I have also, as a company and myself personally, done a lot of work with the Department of Energy; examining their weapons, their processes, how they make things, weapons designs.

So we have got a pretty good handle on what was done back then. It's very narrow window in the '50s, the '60s when this particular weapon was used where it's a two-part system.

They later went to closed -- closed physics system where, you know, the nuclear -- high-enriched nuclear material and the depleted uranium were all in there together.

The depleted uranium surrounds the high-enriched portion of it. The depleted uranium is there because it actually gave a little bit of buoyance.

It's not very radioactive, but you always get some type of buoyancy on these earlier devices because that made it safe, that way. It was only when they were loading the weapons into the planes ready to go that they would take the high-enriched component and slide that in.

And it was a very tight covering because it's very critical that you have the enclosure and be very spherical. So they had to just keep wiping down the inside because the depleted uranium -- problems like that, tends to oxidize pretty quickly. So that's pretty much the gist of what we are looking at there.

Later on, they developed much more impressive safety systems and they were able to keep it as a single package and sealed and the maintenance was no longer performed at the Air Force bases.

It was -- you know, you got it from the Department of Energy as a sealed unit, and when it was due for maintenance, send it back to them.

So we are looking from mid-50s, about

'62, '63, where these particular open systems were utilized.

And again, the depleted uranium was the part that people accessed. The high enriched, that part was stored separately and -- you know, kind of different maintenance.

And even then, it's not as big an external health hazard, if you handle these properly -- with your bare hands, radiation, that uranium sphere, people will either reach inside the round to wipe it down -- the external radiation, it is so small that it didn't even pose any problem for them actually as the wipes are accumulated and thrown away. Similar.

Uranium represents much more of a problem if you happen to ingest it or swallow it or inhale it. It's not much of a hazard in the outside form.

Any questions that I might be able to answer on that?

MR. PRINGLE: Well, thanks. There is more to come. And again, our indications are that what we are talking about is rags and clothing and possibly respirators, which was -- which was buried.

All of the other stuff that had to do

with weapon system and all of that as far as I know was taken off of the base and that was cleaned up accordingly.

Like I say, we went through the igloos. With our environmental assessment, the only one igloo that would be found that had some high readings on it, which was back in '94, we went back again and -- and also AFIOH went back again and looked at it, and those levels actually came down, too. They weren't very high.

And we thought that possibly the open systems were worked on on the benches in this one igloo out there, which is 85831.

So we will keep things up to date as things go along, and like I say, as soon as I find out something that I think is significant or something, then I will pass that on to the BCT members and RAB accordingly. And if necessary, to have an emergency RAB if that's necessary, but I don't perceive that, then we will also do that, too.

And again, Doug Harris is our Public Affairs person, so if anything goes to the newspapers and all that, we will give it to him and he will deal with them accordingly in the same way. If they do something, they'll talk to him accordingly on it too.

And Doug works down at Kelly Air Force Base, and he is responsible for four and five bases. So he and I were -- both went to the same briefings and we were introduced to Jody and A -- AFIOH and all those folks and learning, I guess, our physics all over again as well as the operations in the Weapons Storage Area.

Did you change it?

So I am going on to the second part of the Carswell off-base program update, pretty much. This will go a lot faster than Jody's. Probably because I talk faster.

Fiscal year '93, which is the -- 2003. Sorry -- was one of those years we did a lot of maneuvering, so to speak. Unfortunately, there wasn't a whole lot of money out there for environmental as far as projects goes.

And then some of the other projects that were done with the Real Property Agency, they sent their money there because, from as far as I can tell, I am doing too good of a job and we are not having enough problems.

So I figured this year I need to create a few problems. And I didn't make this briefing up to do this, although it might have been a

good idea so we can get some money.

Example is, this survey was done, but on the Sanitary Sewer System, again, there is 12 sites across the base that are on the main type of the base, and we've already identified need to be dug up soil and gotten rid of because there's metals out there that are above the clean-up level.

So we are going to do that as soon as we get the money. It's number one on the priority list, I'm told, so I am hoping about somewhere in October I will get the money, have it obligated.

Again, November, December, go out there, and probably by May or June have the thing done and closed out, clean, the letter and everything will be taken care of on that one.

On the Permeable Reactive Barrier near the golf course -- and a lot of this is repeat, but just in case -- we put a barrier right here. And basically if you see, there's -- there's kind of a plume that's sticking out right along there. And this area in here is the golf course.

The Real Property Agency wants to eventually transfer all of this, which is now under lease to the Weapon -- to the Westworth Redevelopment Authority.

So this is down in the groundwater only. It's not in the soils. We have actually got a close-out on the soils here but not the groundwater, because this all emanates from another source. But we wanted to make sure that we could get rid of this as much as possible so that in the near future, we could transfer this land.

So the reactive barrier is basically putting iron in there. And when the TCE comes through it, it actually takes it down to less than the MCL, which is the maximum contamination level.

Example was that this plume at one time was all the way out here, which was about 1,200 feet back from where it is right now.

So we have actually, through the Permeable Reactive Barrier and I think some other things that we are looking at, have actually moved this thing back 1,200 feet.

So it's starting to move back that way, and as George will tell you later on, he has done some things over in the Plant 4 area, especially their resistant heating over there which we think also has impacted some of the TCE and is starting to pull some of that back.

So the wall was here mainly to clean

this down. It's doing a fantastic job. HydroGeoLogic is working with that. We are amazed at some of the results we are getting. We have a few more things we need to look in, but the answer is, coming down here in the area around here, that it's cleaning up better than we have ever seen.

And so we are just tickled pink about that. At least I am and all of that.

So we are hoping that over the next year or so, as things progress, we will be able to come up with some kind of a risk-based number to show that that's not a problem and will eventually, you know, actually attenuate, so to speak, and go away.

We could still transfer this land because nobody's going to be allowed to go down there and get into that groundwater. There is already restriction all the way across the base for nobody to use the shallow groundwater.

Now, the deep groundwater is different, but the shallow is where all this is. And so we're hoping that we can, with the help of the PRB, the Permeable Reactive Barrier, get to that point and clean it up.

As a part of the transfer of this golf course area sometime in the future, once the PRB does

its job and we get the groundwater down, I have to work with George on the Air Force Material Command, because they have a record of decision. And that record of decision basically says that you must keep the TCE within the parameters of the federal boundary line, which is Carswell Air Force Base.

The Navy Air Station is a little bit different because they don't have the total land, but the actual federal property is what used to be part of Carswell Air Force Base.

So in order to transfer the golf course to the WRA would move the boundary line, the federal boundary line from here back to this point. In order to do that, I have got to prove to the regulatory folks and to you folks that this groundwater is no longer a problem.

So hopefully working with the PRB along with a few other things, we will be able to do that.

And the way that we are going to do that is OPS, which is I have got to prove that the operations of the systems over here that are cleaning this up -- and OPS stands for Operating Properly and Successful -- I have got to show that those systems are actually affecting the TCE plume and they are

cleaning it up and will continue on in that direction.

As a part of that for this year, I have got two other projects to actually support my OPS. And what they will be doing is, we have monitoring wells already existing over here. I am going to pick up some of those monitoring wells because some of them belong to George, and I think a few of them belong to Mike.

I am going to pick them up with the idea that I will be monitoring all of this area around here to show that this plume is actually continuing to degradate and go backward.

So I have to do this in order to get a ROD amendment in order to transfer that land so that we can give the golf course an actual transfer to the Westworth Redevelopment Authority.

The golf course right now is already under lease to the Westworth Redevelopment Authority, and folks can do whatever they need out there, because we are talking 15 feet down groundwater as an average.

MS. ROCKFORD: Yeah.

MR. PRINGLE: Fifteen to 20 feet, depending on that. So nobody on the golf course is

affected by that.

But the thing is, we eventually want to give this land to -- to the WRA. And some of you are probably familiar with the WRA. There's thinking about some possible commercial entities along here. We have already got the Lowe store we've already seen, which is down here, which it's already been transferred to them.

There is another area right up in here that there is 12 acres that we are working to clean up right now to see if we can't transfer that because there is no TCE plume and all of that. And hopefully, that will happen here in the near future.

And eventually, this other, along 183, will probably be cut out of the golf course. It won't affect the golf course, but nevertheless, that will be something -- more revenue, if you would, to the Westworth Redevelopment Authority.

So my hope is to get all of these projects done, put up the monitoring system, connect that in there. And we will also be doing a five-year review next year which is required by the CERCLA, which is the superfund thing where we will actually stop, looking at everything we have done over the last five years and share with the regulatory folks

what we have done, what we haven't done, where we need to go, that type of thing, and ask for their input at that time to see, you know, "Are we doing what we think we are doing? Are we heading the right direction?"

So it's kind of like a sanity check, if you will. And that will all be done hopefully this year, if I get the money.

As far as projected land transfers, again, the Weapons Storage Area, after we get done doing our investigation, if everything goes well -- seems like it is -- and we don't find anything exciting and all that -- and if we do, we'll be out there immediately -- hopefully sometime next calendar year we may be able to transfer the Weapons Storage Area out there, once we get that done.

The only thing that's holding it up right now is the EOD area, which is the Explosive Ordinance Disposal Area, which is on the far west side of the Weapons Storage Area. It's outside the igloo area.

And we've already done a survey on that with the Air Force back that in 1985. And at that time, we had to go get a certificate from the Department of Defense Environmental -- or the

Explosive Safety Board.

At that time, the thought was we were going to leave it agricultural. But since then, the Real Property Agency has decided they want to make it residential. And that's a smart thing to do, because all of the other Weapons Storage Area at this point can be released for residential, and especially after we do this 91(b) and all of that, with the exception of the EOD.

So we have to go back and do another survey on the EOD, which will probably be the same survey we did before, because we went down to ten feet. We cleaned anything we came across. Any anomalies was immediately dug up. We went into the pits and all of that.

The problem was is that when you go to the -- the Explosive Safety Board, you have to tell them what the future use was. We told them it was agricultural. So now we are saying we want to do it residential, and they're saying, "Well, you need to on come back through the channel and one more time show us, you know, that you were able to do that." So we are going to have go back and do another survey.

The good thing is, though, we will be

using equipment that's much more sophisticated than it was back in '95. So once we do this again, the EOD will probably be cleaned up, because I don't see any problems because, like I said, if -- anything was found as an anomaly was dug up. And we are talking big stuff.

Most of your shells are within your first two feet. If you have got anything big, it's down five feet, whatever, and they cleaned down to ten feet.

So I am suspecting they got everything out there. If we didn't, we will find out anyway with the new equipment.

So once we get that done, the EOD's cleaned up, then the Weapons Storage Area will actually -- the whole area will be declared residential.

Once we get this done, DOD, put it together, a certificate and the AFRPA probably go through the General Services Administration, advertise the thing and take bids and transfer land accordingly.

For the golf course parcels, we already talked about that. Again, that's many -- things along the -- 183, with -- the Westworth

Redevelopment Authority wants to turn the -- commercial; have companies come in there, offices, whatever, and produce more money from them as well as continuing on with the golf course and doing their thing.

So we are hoping to have that whole thing transferred to them over the next couple of years. Not as fast as I thought.

Any questions? Yes, sir.

MR. SEWELL: Did you say probably next spring before you do any removal field work on the sanitary sewer?

MR. PRINGLE: I am hoping to get the money in October.

MR. SEWELL: Right.

MR. PRINGLE: If I do, it will probably be January, February time frame when we actually get into the field.

MR. SEWELL: Okay.

MR. PRINGLE: If everything works right, we will be able to get you a work plan in December. If we work real fast, maybe by 13 November when we have the next PCT.

Because we know what the work is. I know what it is. It's already been identified. We

investigated it. I just need to get the money and start off and get the thing done.

Any other questions? None? Okay.

Then we will move on, and the next part comes up where George is on tap. Thanks.

MS. ROCKFORD: Thanks.

MR. WALTERS: I guess we should have had the mic so you could do the Carswell, but we'll switch over to the Air Force Plant 4.

So, knowing we were going to talk about the Weapons Storage Area today and knowing we had a nuclear research facility at Plant 4, I figured I would give y'all an update on the decommissioning of it many, many years ago just to bring you up to speed. Many of you here may know more about it than I do.

We have a conceptual model work ongoing, and then we are also doing landfill survey. But people who are new here -- I see a few new faces -- we have -- Plant 4 is outlined in yellow. It says "Carswell" over here. Plant 4 is -- the one building is one mile long.

So the nuclear research facility is what's located at the northern end. I've got some facts on it on the next sheet, but you can see where

it's located and -- relative to Carswell Air Force Base, and again the Weapons Storage Area is about five miles to the top of the page.

This is what it looked like back in the probably '60s and '70s; a lot of equipment. They had three reactors. And they did a lot of research on -- at one time, they tried to build a nuclear powered airplane, but of course that wasn't light enough and that little project failed.

But they did a lot of work by, you know, the electronics on airplanes and stuff. They would radiate it and see if that would damage the equipment. So if they were flying an airplane, and all the sudden one of these bombs would go off. They wanted to see how that would react with the electronics, so they did a lot of that work.

And once you irradiate something, of course, it's radioactive and you have to dispose of it. So as part of the disposal, when the site was decommissioned back in 1974, over 17 million pounds of all of that was hauled away. And you can see here that it was given unrestricted use.

And back in the early '80s when we did our original IRP sites, this was one of the 20. And when they did the ranking system and a scoring

system, the top 19 scored between 88 and 51. The NARF area was so low, it only scored a 6. It was decommissioned.

And Jody, you can probably tell me if they have all of the equipment back in -- they still -- today to see if anything was hot and remove it? Would that be a correct statement? Looking at Jody here.

MALE SPEAKER: He is the surveyor.

MR. WALTERS: Okay.

DR. WIREMAN: Repeat the question again.

MR. WALTERS: Well, it's just that some of the -- some of the same equipment they use now as what they used back then when they decommissioned -- I am sure it's gotten better now, with all the --

DR. WIREMAN: It's -- yeah, it's changed quite a bit since the '70s, what's utilized nowadays. So it's -- it's hard to say certainly, but if you remove that much of -- it sounds like -- you know, typically reactor, mostly it's done as removal. There's very little residual left in the soil so...

MR. WALTERS: And I will make a guess that the work that was done there was probably a

lot -- classified, and they probably didn't want to leave anything that was classified behind and they sure as heck made sure they got all of it out of there.

But as I always tell you, all of my reports for Plant 4 are on CD ROM. So if anybody would like my copy I have here, I can give it to you. Otherwise, it's at the library.

All of the previous work that was -- obviously the IRP investigations and some of the work here. Again, this is what it looked like from the lake view.

They did have a barrier to keep people out. You had to have a distance around it that you would maintain, keep everybody out obviously.

Well, I can -- the radioactive guys can explain this. I mean, here you have got people standing there. So how exactly was the radioactive stuff kept so that you could walk around it?

MALE SPEAKER: Yeah, I'm not sure -- often in simple reactor sites, that -- use water, and that -- what you are looking down into is a pit filled with water. And the water is a very effective shielding for both the neutron and the gamma radiation but yet again allows you to work freely

from the surface, and it's called a swim pool reactor design.

I can't really tell if that's what it is, but obviously actually back in the -- those days, they were very careful with the work that had been -- limits to stand a little higher back then but not much.

MR. WALTERS: I'm going to talk to you just to show you all the work that was done there and just that -- I guess I was trying to say that, you talk about radioactivity -- I get nervous when I hear about it -- and mostly we're talking about the Weapons Storage Area. And hopefully they have explained it to you that you had shouldn't be nervous. But the fact people are walking around and, again, it being decommissioned properly.

I do have some information on some radioactive uranium, radon and americium. Everybody here hopefully has a radioactive device in their home, a smoke detector that has a -- a little bit of americium 241 in it that ionizes the smoke. So if it ever falls off of the ceiling, you know, make sure your dog doesn't eat it, because it's when you ingest it that you get the harmful effect.

Americium, is it alpha? Alpha. Alpha

won't go through your skin. You can blot it with a piece of paper. But if you were to eat it, that's when it can do its damage. I think of a smoke detector, so hopefully that wouldn't hurt the dog either.

And we have a black and white photo of it. And I am coming up on what it looks like today. Again, that's a trailer. Kind of a far end of the building, so they haven't put anything buildings there to do anything. Most of the manufacturing and also, everything, it's so far away from the main part of the building -- they have a building there to do future work. It's kind of out of the way, but obviously right now, they use it for storage.

And that's all I had on the nuclear aerospace research facility. Again, the Air Force does have a no-further-action document on it, and that's in the admin record for you to read if anybody has any questions on this.

I'll let one of these experts answer it, but I didn't know if any of the public had heard stories about the site. And we did sample. It was closed in '74.

Sediment and soil borings and groundwater were sampled in the '80s, and then we

hired a contractor that did our remedial investigation in the '90s called (inaudible). They worked for the Department of Energy out of Grand Junction, Colorado, and since they are good with nuclear stuff, they actually did the Lake Worth sediment sampling. And it all came back to background.

So I am going to switch gears, just talk about some future innovative work that the Air Force is trying to do to make sure we understand our plume.

This is the groundwater plume originating over here at Plant 4 at some possible source areas. The -- geological surveyed, groundwater modeling experts, and they can particle track. Water doesn't jump over. When you have two sources of water that meet, the part coming in from the right can't jump to the left.

It's just the way groundwater flows. Especially at low speed and down in the ground. So when they do some particle tracking, they can come back and say, "Well this part" -- you know, TCE is what we are dealing with here.

They can come back and say, "Well, it came from here, and it didn't come from up here

because, you know, groundwater flows one way, and the particles travel with the plume."

So this was kind of an older model. And every year, if you are going out to the computer store, you know how computers are getting fancier and faster and the software is getting better. You can do better modeling.

So in this area here, I have a groundwater treatment facility. I am pumping, oh, approximately 100,000 gallons a day. I think it is -- it's 85 to 100 gallons a minute from roughly 50 extraction wells. And I want to see how I am pulling my contamination in. And again, I don't want to just pump so fast that -- you know, I don't want to pull clean water in. I want to pull in the contaminated water.

So to make sure I am doing it properly and most efficiently, we can do some modeling and find out maybe I need to turn one well off and turn another one on faster. And hopefully by using this technology, we can speed up the depletion of the plume.

So again this is the hot spot around the Plant 4 area. So going from 2001, you go to a couple of years, again, it's really pretty if you can

see the stuff we did back in the early '90s, what this stuff looked like.

They can map the plume, and this is probably bedrock. This is the surface. See Lake Worth up here. Plant 4 sits right here. Obviously, the runway. And the golf course area over here, and then the river over on this side.

So we have a gazillion borings in the ground and monitoring wells. So when we go 20 feet deep and we change from one layer to another, we obviously have a core. We know exactly where -- 20 feet below the ground when the limestone shows up or when sandstone shows up. We've got probably -- between Carswell and Plant 4, we have probably 1,000 monitoring wells and probably a few thousand soil borings.

So you get all of that information. And how do you manage it and obviously try to make sense of it all? Well, by using this type of a GIS, geographical information system.

So this is looking down below the top of the -- the top surface doesn't really interest us too much because groundwater is roughly 20 feet below. And just because you have a surface, something you can look up here, doesn't mean it's

down in the ground. You could have a bedrock high, and groundwater is not going to go this way. It's going to, you know, obviously go off in a different direction.

So by looking below the surface, with our binoculars, we can see where there is an old Paleo channel. That was a stream bed. That's got gravel. Gravel. Water's going to flow through this gravel a lot harder than it is in this bedrock area.

So by knowing where the Paleo channels are, we can pinpoint wells and know that -- the wells we want to monitor and the wells we want to extract from.

You can see these two bridges here. That's our bedrock high that Plant 4 sits on. That's always interesting because, on this side groundwater flows this way, and on the other side of the building, water flows to the west.

Plant 4 being as large as it is and built in 1941, '42, '43 time frame, during the war, very quickly, it has lots of pipes; miles and miles and miles of pipes, and unfortunately a lot of them leak. And that's where we get a lot of our groundwater flow. The pressure to push the groundwater off is from the leaky pipes and obviously

the little bit of rainfall you get here.

So again, that's -- these are where our geologists -- that are very important to know where all of this is.

Again, looking down even further, what we want to protect is the Paluxy. Although it's not used for drinking water under the plant, it is used further off.

Right now, we have localized areas where it's interesting to show you here is the bedrock, which in a lot of places is 30 to 40 feet deep -- thick. And it protects shallow groundwater from going deeper.

In some areas it's missing or thin or fractured, meaning groundwater from the top can get lower. And so that's -- in the east parking lot, where we have a lot of extraction wells to obviously keep that from spreading and contain it.

And again, just different views that we can look at to -- you have to have a conceptual model of what you are doing so you know how to attack it.

And again, this helps the EPA and the regulators and all of the contractors hopefully kind of agree on what the big picture looks like. And for

Carswell and Plant 4, we need a big picture because of the commingled plume we have with those Plant 4 and Carswell and all of the activities they are doing.

Terrace means the -- the upper, right below the surface. The Walnut, again, is the bedrock, and the Paluxy is a drinking water aquifer.

And I believe this will be out in a report in a couple of months and probably placed in the admin record and obviously, you are all welcome to review it and look at it.

And just again, that's our bedrock. That's the groundwater divide. These are some of the monitoring wells we have and extraction wells. These happen to be Paluxy wells, which are the deeper ones.

This is probably a two-mile by two-mile grid. And while it looks real pretty here, when you are walking between these two wells, it's -- it's a long walk.

So while this makes it look like we have a lot of wells, when you are out there -- that's what contractors tell me: "I need more wells."

So I have got to decide, with the EPA and Texas, the regulators, "Do I really need more wells, or can I, you know, sample a different well

close by and say, 'Hey, I think I got it covered. Let's not spend $10,000 for one more monitoring well in the ground.'" .

So hopefully using this system and making sure we look at this first before we go put an extraction well or monitoring well in will save some money.

Okay. So that was it for the conceptual modeling.

Two more charts left, is just that whenever a new technology comes out, I know that the USGS is up on top of it, and we like to use it, too.

So my boss was at a briefing a couple of years ago by the USGS, and they have a different type of a radar that looks into the ground: Early time electromagnetic visam [phonics].

I am not sure if you guys have used it. Maybe it's just a USGS type of technology. But my boss saw some really clear pictures of the subsurface, and he wanted us to use it at Plant 4, like a lot of things that look into the ground. This is probably an old way to look at it. But this is the new way.

By pulling it on a tractor in a wider area. So we didn't want a whole lot of utilities in

the way because a lot of Plant 4's plant fills have a lot of rebar and metal stuff and fences. And any time you have fences around this equipment, you get some interferences.

So Carswell had a nice landfill that we could test out the technology, and it turned out it came in handy to check out by the Permeable Reactive Barrier to see if one of the wells which was reacting kind of funny, if anything was around it. And we were able to use this technology over it, too.

And hopefully in the next couple of months, we will see exactly how well that looked under the ground. The site's already been closed. It's had surveys done over before. It's got a cap on it, so there is no obviously risk to anybody.

It presented a nice area that didn't interfere with anybody to look at, so that was the site that was chosen. And that's my update for Plant 4.

Unless there is any questions, I had some back-up charts if anybody wanted to ask me about our heating system or anything else we have done in the past that you have done some briefings before. So any questions from anybody? Otherwise, we'll turn it over to Mike Dodyk.

MR. DODYK: Okay. I am Mike Dodyk. I work for AFCE, but I am the resident engineer here at Carswell. I am the guy that makes things happen on site. Day-to-day work with the contractors is what I am involved with.

Give you a little history again: The Environmental Restoration Program, Carswell was closed in September 30th, 1993, and the majority of the base was realigned as the Naval Air Station. And again, a portion of it went to the Westworth Redevelopment Authority.

Now, because we owned it way back when, we are still responsible, the clean-up of that contamination that -- that occurred before October 1st.

In compliance with the Resource Conservation Recovery Act, we do a RCRA facility assessment that was done in 1989. That's where they went out and looked at and said, "Are there any potential releases of contaminants?"

And this -- the RFA identified 87 sites on the base, on the Carswell property that required investigation closer. These were potentials. Things like landfills, fire training areas, underground tanks that could possibly -- there

could have been releases.

We identified 68, what we call Solid Waste Management Units and another 19 areas of concern. And it doesn't show up very well on this map. The sites are either in green, which indicate the Solid Waste Management Units, and the red sites are areas of concern.

So far, we have received closure; that is, we have proven to the regulators that there have been no releases from 78 of the 87 sites. Consequently, we still have nine remaining. That's my job at AFCEE is to identify these sites, prove there was no contamination or if there was a contamination released, a danger to human health or environment, that we remediate it.

Of these nine remaining sites, three we plan on closing by the end of this year. That shows 19, 20 and 21. And we had planned on closing another five by next summer. And then AFC 1, which will be closed later on that -- an operating system to clean up.

To ensure the complete investigation of source of contamination, again we have already identified 89 sites. And we are getting another look. Just like we said on the red site at the

offsite weapons storage area: They had investigated before. We are taking a new look at it.

We are taking a new look, doing a historical research again for any releases. We're looking at records searches of archival documents. We're going anyplace where we find a history of this base.

We are interviewing with Air Force personnel who were stationed at Carswell. We are going look at all of the old aerial photographs and find historical data.

Now, one of the ways we're -- as far as finding people who worked here, we are going to publish an ad in the paper, and we're going to have a 1-800 number.

Now, I would like all of you people who worked around here, we have copies of this. You can take it home, put it up at the VFW hall. If you know anybody else that had worked here and knows of any potential releases, call this number, and then we'll investigate it further.

Now, the field activities, present operations, we constructed this groundwater remediation system at the former base gas station. There is a new one on site right now. We completed

the system in June, and we started operation on the 10th of June.

We are also doing performance monitoring of that permeable reactive wall; see how well it's been operating. Results so far have been very good.

We -- also something new as a demonstration project: On the northern lobe -- you remember there's three -- three lobes of plumes migrating across the base. Reactive wall is taking care of the southern plume. The middle plume staying on base. There is a demonstration because there is a narrow space where the plume -- as it migrates, it's -- one is a very narrow spot up there.

We injected vegetable oil. Vegetable oil contains carbon. We're using it as a carbon source, and carbon reacts with the TCE and causes it to break down and then because the carbon atoms replace the chloride atoms, therefore, it becomes CO2.

This is the treatment -- AOC 1 Treatment System. This system here is extracting water. It's pumping out of the ground. It's pumped out of the ground. We have a pneumatic system by area. We have bladder pumps that literally pump the

water out of their six extraction wells.

Pumped in here, and this an area we literally blow pump water down this chamber and we blow air up and literally strip off the gasoline off of the water, and the water is discharged to the City of Fort Worth sewer system, and the concentrations of gasoline go into the air at a very low rate.

The system has six groundwater recovery wells, each approximately 33 feet deep down into the water. Contaminated water is pumped through the surface and passed through what we call the air strip.

So far, the first 20 days of operation, we have identified and we have treated 183,704 gallons of contaminated water. It's a very low-rate operation where we are pumping six gallons a minute right now. So far, .67 pounds of benzine and 3.3 pounds of total petroleum hydrocarbons, or what we call TPH.

The Permeable Reactive Barrier, we have talked about this before, was installed last year; April, May of 2002, to remediate that plume containing trichloroethylene. Groundwater sampling at this reactive barrier we -- it's conducted every three months.

We measure that by taking samples immediately upstream of the barrier, in the middle of the barrier and downstream of the barrier. And we found it successfully remediating the groundwater. Is this where it now goes? Anything else or --

MS. ROCKFORD: It will go.

MR. DODYK: Okay.

This is the runway, and we are going to zoom down into the contamination site. This here, this line here is the reactive wall, and this shows the intensity.

It shows how -- the higher concentrations, you can see the concentrations there are decreasing. As contamination goes through the wall, it breaks down, and so the concentrations that's in the groundwater downstream of the water -- this is the golf course area right here, and you can see it starting to decline in value.

And we have -- the May results are our latest results. This is another view of the system. Again, you can see the concentration. Red, of course is the highest so that the concentrations are decreasing.

Okay. Upcoming field work in the fall, we are going to continue the monitoring of that

AOC 1 Treatment System. Because again, we just started. We want to see how well it's working. Hopefully, we will get good results on that.

Delineation of various compounds. This is at Landfill 1. We are going to find out how far is the contamination out from where the location is in the landfill.

And we do have that some of the cadmium was identified above what we call MCLs, so we are going to have to do an excavation. We are going to remove some of the soil. The cadmium is at a high level.

This is at Landfill 1, which is along the river, the Trinity River, downstream of the East Gate.

We are also going to delineate or identify the -- how far out the soil contamination and sediment contamination stands. At SWMU 64, this is the drainage outside by the East Gate.

All the storm water is leading to this discharge channel. And so we're going to identify that, and we'll be doing that this fall.

Documents under review, remember work is not done until the paperwork is complete. Right now currently we are redoing our RCRA facility

investigation report at SWMU 49, which was a former aircraft washing area, where they were washing B-52's. We are reviewing that report that was conducted by our consultants, HydroGeoLogic.

Currently, the regulators have two documents: They have the RFI, the SWMUs 19, 20 and 21. We all combine them together. They're various components of the former Fire Training Area No. 2.

We also have the final site investigation for Building 1010, the former engine -- jet engine test stand. We do have these, what do you call them? Executive summaries of those documents, and their locations. If you want to see where they are at and the brief summary of what these reports say, you can pick them up on your way out.

Currently now, we are talking about discussions -- we are having discussions with the regulators. Our final report is the focus feasibility study on the southern lobe of the TCE plume.

And that's it. Any questions? Mr. Sewell?

MR. SEWELL: Mike, could you run by those -- run those -- those five Solid Waste Management Units that you are planning on trying to

have done by the end of June next year? I want to get those numbers.

MR. DODYK: Okay.

MR. SEWELL: There we are.

MR. DODYK: Okay. Right there. The thing about -- this entire thing is the summary. You can pick them up, too. Don't have to take notes. You can get this entire briefing.

But SMUs 28, which is Landfill 1; 49 is the wash rack; 54 and 55 are the East Gate and storm water interceptor and storm drains. 66 is the sanitary sewer, Chuck?

MR. PRINGLE: Right.

MR. DODYK: Assuming we get the money.

MALE SPEAKER: I just have a comment. The Permeable Reactive Barrier has proven successful to such an extent that Tinker Air Force Base in Oklahoma City is also installing a Permeable Reactive Barrier in the near future to control their TCE plume.

So the Air Force, seeing the success here at Carswell, is using the same remediation technology at Tinker.

MR. DODYK: Is that under the main assembly building or is that -- whereabouts?

MALE SPEAKER: Yeah, on the western plume, RCRA plume come out of the west. They have been monitoring it for the last three or four years and it just -- in the last three or four months, the plume has gone offsite. So they are now having to install the wall.

MR. DODYK: Okay. Are there any other questions?

Okay. Maybe you couldn't see it in the dark. This is that fact sheet, that 1-800 number. If you know of anybody, you might want to take a couple of copies of these, like I said, to post at the VFW halls, hand to some of your friends. This ad will be run in the newspaper, also.

MR. WALTERS: Well, at this time, we set up the next meeting. And based on my contractors, we believe November 13th, which should be the second Thursday of November, is a great time to have another meeting. So I'll move that we have the meeting and the RAB -- or the technical meetings during the day and RAB at evening.

Hopefully, public can get all of their friends to attend. And do you have any ideas for what you would like to see briefings from us on? If you don't know tonight, please let us know in the

future, and we will give you an update. Yes, sir?

MALE SPEAKER: Is this the appropriate time for questions?

MR. WALTERS: Yes. Yes. After we agree with the November 13th meeting, we can start into the open questions session. I see a good thumbs up on the November 13th. Yes, sir.

MALE SPEAKER: I heard the term "the project being closed" and with respect to the -- Mr. Dodyk's presentation and particular sites, and in respect to Mr. Pringle's presentation, I heard that when you reached a certain point, the property would be conveyed to the WRA.

There is one -- and you and I talked about this. There is one small piece of property east of -- I'm sorry -- west of 183 at the intersection that's owned by private parties.

As this plume has withdrawn and the levels of contamination have gone down, I am led to believe that it is now below the levels that the State requires remediation.

My question is -- and I bumped into -- every way I have gone, I have bumped into, talked to somebody else. I want to talk to everybody at once.

Can somebody tell me who issues a

closure letter on behalf of whomever it is that's responsible for this TCE contamination being in the groundwater that I can take to a title company that says, "This property is not contaminated"? Where can I get a closure letter from either the -- the U.S. -- RPQ?

MR. WALTERS: The answer to your question, we get our closures from the EPA and TCQ right? They deem a site has been closed and available for -- you know, we tell the EPA that we believe we have done this to the site and have it in this condition. And then they, you know, kind of certify that based on the conditions today --

MALE SPEAKER: Do you provide -- do you provide the information to them --

MR. WALTERS: We do that for federal property.

MALE SPEAKER: Beg pardon?

MR. WALTERS: We do it for federal property. So for something that's offsite -- I won't say we are lucky. We don't have the lawyers here today, but normally we have a whole bunch of our lawyers here who could answer that question.

MALE SPEAKER: Well, how does one go about --

MR. WALTERS: Private property the EPA deals with where there are TCE plumes, and I know you do federal, you know, facilities like ours. But what about public people out there? What goes on with them?

MALE SPEAKER: Well, you pose a very difficult question, obviously, as you understand it. But the property currently has no deed restrictions in place to my knowledge.

MALE SPEAKER: It has a disclosure requirement.

MALE SPEAKER: It has a disclosure requirement. Okay.

MALE SPEAKER: State law requires me as a property owner and a real estate person to disclose this information.

MALE SPEAKER: Right.

MALE SPEAKER: The property across the street had a spill, and got a closure letter on that particular matter.

MALE SPEAKER: Right.

MALE SPEAKER: It was not this. It was a separate one. And so I need to know who initiates or how do I go to get the information to take it to get this -- the letter closured?

MALE SPEAKER: Being a CERCLA, a plume, a plume that -- is this the plume that is CERCLA that we are talking about?

MALE SPEAKER: Yes, sir.

MALE SPEAKER: Being a CERCLA plume, the -- the CERCLA response or the road map that leads to that closure, of course, is called the P report, the preliminary close-out report. That report would be prepared by the Air Force for review by the EPA.

Now, that P report would not be prepared until not just that single piece of property is remediated but the whole entire remediation system is deemed to be operating and performing successfully and functionally.

That OPS, Operating Performance Successfully determination is still probably a couple of years away before the Air Force could prepare the preliminary close-out report, which they give to the regulators to give a stamp of approval that would go a long way in allaying the fears in your disclosure.

But the -- the way the CERCLA process is, we don't look at individual tracks of land. We look at the remediation technology and the record of decision as it applies to the entire plume. So that's the difficulty.

Because you are not going to get EPA to give you a preliminary close-out report until we have an Operating Performing Successful statement from the Air Force. Their remediation system is in place and performing successfully.

DR. WIREMAN: And there would have to be like an interim report like a finding of suitability for transfer that would, you know, address something like that?

MALE SPEAKER: (Inaudible.)

DR. WIREMAN: Right. I mean, I have never heard of the government doing it for off-base, but they have done it for on-base portions. An EPA regulator community, the way we looked at it is the close-out report would not be prepared until it addresses the entire plume independent of the property. You know, Air Force property versus private property or whatever.

Now --

MR. WALTERS: As a private citizen, though, to show it's below MCLs, even though it's not a drinking water aquifer --

MALE SPEAKER: Well, the EPA would do is -- we could provide you with health assessments through ATSDR, but -- the disclosure that the

contamination is what it is: One -- one PPB of TCE, which is below the MCL 5, and we could have a public health consultation given to an -- you know, an entity that could use that to allay the fears to the purchaser.

But that doesn't give it a stamp of protection of liability.

MR. PRINGLE: That is a question going on with what you are saying. I talked with Mark Weaver at TCEQ. He said, you know, that you can actually volunteer for a clean-up program. This is under TCEQ.

And based upon that, you can get a Certificate of Innocence. And that shows that, you know, what contamination is on your land is not your responsibility; it's somebody else's responsibility.

And based on what I know, which is not a whole lot, I think that might be the best way for you to go. Because going through that, you get your Certificate of Innocence which says, you know, "We, the Air Force, are responsible for that clean-up," and that would give you -- if I understand it correctly, your land, that kind of free feeling that it's been excluded, so to speak, from at least this.

It still says that, "We, the Air

Force, are responsible for clean up the TCE plume, which we're working on and eventually we will get to the OPS and all that." But like Robert said, that's sometime in the future.

But I am thinking, again, talking to Mark Weaver and Tim shaking his head a little bit, that's probably the best way for you to go.

MALE SPEAKER: So Tim, do you all -- we can make application to you?

MR. SEWELL: There is information for this program that Chuck has mentioned. It's called the Innocent Landowner Program.

MALE SPEAKER: Okay.

MR. SEWELL: And we have quite a bit of information on our TCEQ website.

MALE SPEAKER: I have this card to give you.

MR. SEWELL: Let me see if my website is on there. If you will give me a call, I will get you the web address. I don't have anything on it right now. I don't have anything with me right now that's got that.

MR. PRINGLE: Again, this, I would feel that you would have to coordinate that with the EPA folks, too. I think, with TCE taking the lead on

this, so to speak, to get a Certificate of Innocence, that -- I don't want to speak for you guys.

MR. BENNETT: No, that's correct. We would defer to the State of Texas on a -- a matter like that. Again, not speaking for an attorney. We would likely acknowledge that. We try always to defer to the State of Texas under their regulatory authorities.

MALE SPEAKER: Could I get your card?

MALE SPEAKER: Sure.

MR. WALTERS: Any other questions? I've got a question for the City. You have like your own sediment sampling program and water quality assessment and even fish tissue analysis. How do we share that with our RAB people because also, they are interested?

MALE SPEAKER: Usually the person there to talk to is Clarence Reed. He is over the water quality group for now. I can give you a business card and you can give me a call, and I can get you that.

He is over that entire group. He can tell you exactly what's going on and who is doing what and so forth.

MR. WALTERS: Am I understanding you

are going to do additional fish tissue sample?

MALE SPEAKER: I -- I have no idea. I am not really involved in that group.

MR. WALTERS: Chuck?

MR. PRINGLE: Question. Do we still have our website?

MS. ROCKFORD: Yes.

MR. DODYK: Is that information something we can put on there and anybody could go in and get that information as to who is responsible for what and that type of thing?

The other thing I am thinking, too, is -- and I don't know if everybody is aware of it, but the administrative record we have referred to is -- you know, reports that we have done that are put over at the library. They are also on a website.

If we could put that on the website, and then if you are interested in any site, any report, you can go in there and type "Carswell Air Force Base," and it will show you a report you can read so you can do it from the safety of your home, so to speak.

MALE SPEAKER: What's the address there, that web address?

MALE SPEAKER: Go to the AFCE website:

www.afce.el. And from there, you will go --

MR. WALTERS: Type in "Carswell."

MALE SPEAKER: Type in "Carswell" and find it, yes.

MS. ROCKFORD: It's actually -- it's on the -- it's on the back of the fact sheet, if you picked up this document. All point of contacts are here. Chuck's phone number, Mike's phone number, George's phone number and the website. So this the fact sheet.

MALE SPEAKER: So you can go to the AFCE website, punch in "Carswell," and it will bring up to the website --

MR. DODYK: The whole address.

MR. WALTERS: Areas of separation, you can find it. Well, any other public at this meeting that want to be the RAB co-chair?

MR. DODYK: Don't all volunteer all at once.

MR. WALTERS: We'll hit you up at the next meeting. Any other questions before we let y'all go, Chuck?

MR. PRINGLE: Just as a suggestion, Mike, you might want to try and go through co-chair until we get a more official one.

MR. WALTERS: I am probably going to rotate this to you guys next time.

MALE SPEAKER: Nice try, Chuck.

MR. PRINGLE: Well, I am thinking, you know, for tenure purposes.

MR. WALTERS: Well, hopefully everybody got some good information tonight, and we are going to stick around.

Anybody have any question you don't want to talk to us about in front of everybody, please come up and talk to us. Look at our plume map, ask questions. And our next meeting's -- we will see you at the next RAB or talk to you on the phone.

(Meeting adjourned at 7:37 p.m.)

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STATE OF TEXAS

COUNTY OF TARRANT

I, Suzanne Small, Certified Shorthand Reporter in and for the State of Texas hereby certify that the above and foregoing pages numbered 1 through 84 constitute a full, true and correct transcription of my stenographic notes from the above-mentioned Restoration Advisory Board meeting held on August 21, 2003.

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Suzanne Small, CSR, RPR, CM
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